

the intracranial volume and prevent the formation of dead space between dura and cranium.

Of Ketchum's series in roughly a third of the patients no complications occurred, in another third there were minor complications and in the remaining third there were major life-threatening complications requiring intensive care and prolonged hospital stays. Most of the major complications occurred in patients who had received preoperative radiation treatment. This is similar to our own experience. Remembering that malignant lesions and benign tumors such as nasopharyngeal angiofibromas with intracranial extension were considered by many to be unresectable and for the most part incurable, this high complication rate appears justifiable.

Our experience with excision of tumors such as angiofibromas, esthesioneuroblastoma and carcinoma of the maxillary and ethmoid sinuses supports this concept of combined intracranial-transfacial excision.

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Immunity in Head and Neck Malignancy

Prognosis

ALTHOUGH NOTED in epidermoid cancers at other sites (for example, breast, colon and lung) the correlation between impaired nonspecific immune response and survival is nowhere stronger than in tumors of the upper aerodigestive system. The ability to show topical sensitization to 2, 4 dinitrochlorobenzene (DNCB) on secondary challenge has proved thus far the most popular and reliable *in vivo* assessment of the integrity of T-lymphocyte (cellular immune) function, thought to bear the major responsibility for tumor immune response. Eilber, Morton and Ketcham, for example, investigated 120 patients with a broad spectrum of head and neck malignancy. Of patients with localized and operable disease, 64 per-

cent were DNCB reactive; 89 percent of these patients remained free of disease at six months irrespective of treatment. On the other hand, 85 percent of patients with locally advanced or disseminated disease were nonreactive to initial sensitization; only one of this group was alive one year later. Furthermore, posttreatment testing showed that a continued positive, or conversion from negative to positive, response was associated with tumor control in all cases.

Therapy

Unlike assessment of prognosis, immunotherapy in head and neck epidermoid cancer has not yet been widely initiated. However, several important theoretical principles already have emerged from pilot clinical and laboratory investigations. First, the maximum response capacity of a healthy, unaided immune system will destroy between 100 million and 1 billion cells, a tumor load only approaching detectability by conventional means. Second, the immune response destroys all cells within its capacity, unlike radiation or chemotherapy—both of which effect only those cells which are cytogenetically or biochemically vulnerable. Finally, the immune response is thought to be ubiquitously effective, so that targeted cells residual at the primary site, in regional lymphatics or distant in the viscera are equally subject to destruction. All of these considerations lead one to conclude that the first application of immunotherapy to malignancies of the head and neck will be in conjunction with contemporary modalities when tumor load is lowest.

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Additional Help for the Hearing Impaired

ADVANCES in hearing aid design as well as new techniques and philosophy in hearing aid fittings have increased the number of patients who can benefit from amplification.

A patient with a high frequency loss, even when the hearing below 2000 Hz is normal or near normal, may have a great deal of difficulty in noisy situations and in distinguishing between

many high-frequency consonants. In the past, these patients were considered poor or impossible candidates for hearing aids. Now, however, with more sophisticated design, compression circuitry, open mold and CROS—BI-CROS fittings (CROS stands for contralateral routing of signals) and greater understanding of the effects of tubing size on attenuation of the low and middle frequencies, many patients with high-frequency loss can be fitted comfortably and necessary amplification achieved.

A patient with a unilateral loss was not, in the past, considered a candidate for amplification. However, because such a patient is unable to locate the origin of sounds, unable to hear someone on his "bad side" and finds communication in noise exceptionally difficult, he should benefit from binaural hearing. Therefore, depending on the needs, goals and motivation of these patients, a hearing aid may be of great value.

A child with a minimal hearing loss, even as little as 15 to 20 decibels, should not be overlooked as a possible candidate for amplification. The auditory channel is so important to the acquisition of communication skills that no child should be without adequate hearing for any period during his formative and educational years. A hearing aid should be worn on a trial basis and consultation among parents, physician, teacher and audiologist is essential before a decision is made.

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Bell Palsy—Update

THE PATHOGENESIS of idiopathic facial paralysis has been poorly understood for decades. Recent work indicates that a viral infection of the facial nerve is responsible. In many cases, a polyneuritis occurs, with viral involvement of the phrenic, hypoglossal, trigeminal, glossopharyngeal or other nerves. There is evidence that the responsible virus is herpes simplex.

The route of viral entry is thought by some investigators to be the oral cavity and submandibular gland, proximally via the chorda tympanic nerve, with subsequent involvement of the main trunk of the facial nerve. Clinically, this route is manifested by an early diminution in the submandibular gland's salivary flow rates, or by an erythematous chorda tympani as seen through the tympanic membrane. These changes frequently precede alterations in facial nerve function.

Therapeutically, controversy still rages over the efficacy of surgical decompression. Reports of immediate return of function following the operation tend to support the use of surgical procedures in selected cases. Recently, a well-controlled prospective study has challenged the rationale for steroid treatment in idiopathic paralysis.

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The Brow Lift

A LOCAL BROW LIFT is a useful adjunctive procedure in cosmetic surgical procedures on the eyelids. Particularly beneficial in elderly patients with brow ptosis, this procedure involves excising an ellipse of skin immediately above the hair of the brow. After primary closure the resulting upward and lateral slant of the eye yields a more alert and pleasing facial appearance. In addition, excess upper lid skin occasionally becomes functionally and cosmetically less disturbing.

A relatively simple operation, the local brow lift requires minimal undermining of skin margins and can be done readily under local anesthesia with little patient risk. The design of the surgical ellipse is dependent upon the location and extent of brow elevation desired. The resection is usually at the lateral aspect of the brow to maximize the upward lateral slant. A double layered closure with eversion of the skin edges is essential to minimize widening of the post-operative scar. "Tacking" sutures from the lower incision line to forehead periosteum has been ad-